

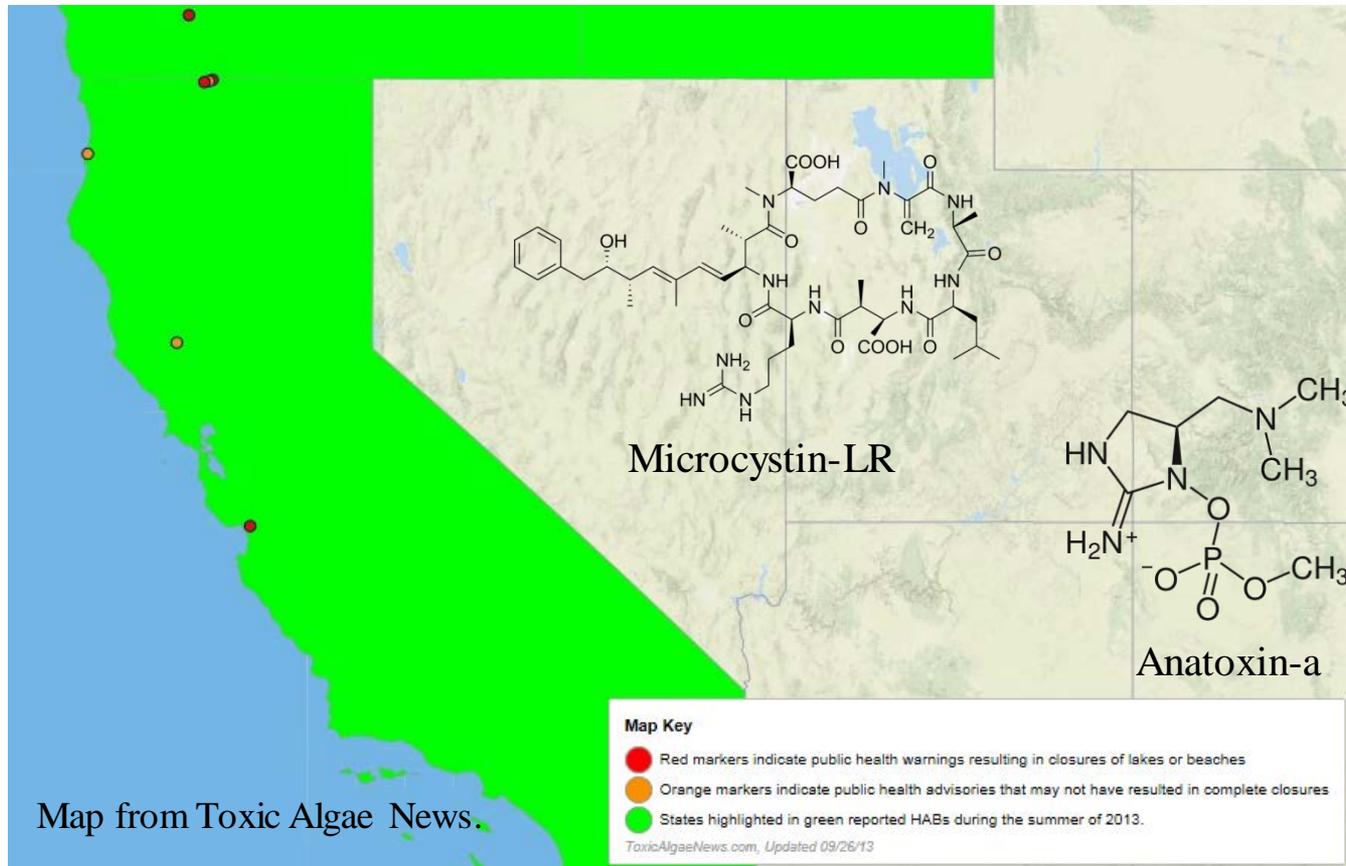
California CyanoHAB Network



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Ocean Standard Unit
State Water Resources Control Board



CyanoHABs in California

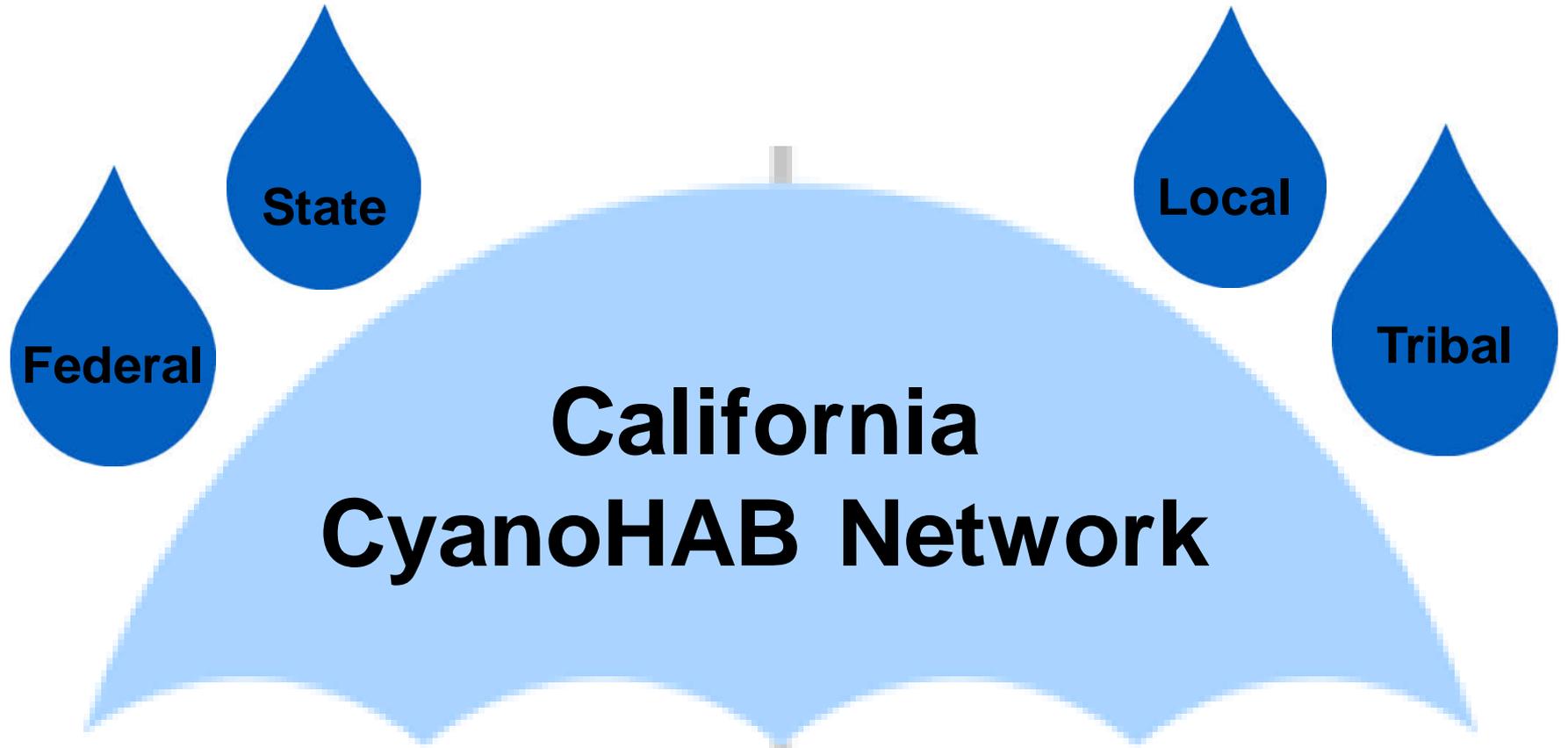


Map from Toxic Algae News.

Challenges with CyanoHABs

- Complex set of environmental factors.
- Diverse set of stakeholders.
- Multiple agencies.
- Based on World Health Organization guidance levels.
- Lack of statewide consistency in monitoring.
- Challenges to posting and public use of water bodies.





Develop a statewide framework to address cyanoHABs in California's freshwater and marine ecosystems.

California CyanoHAB Network Stakeholders

- Federal and State Agencies (State Water Board, Regional Water Boards, OEHHA, DFW, CDPH, DWR, U.S. EPA, USGS, FWS)
- Tribal Governments (Karuk Tribe and Yurok Tribe)
- Local Health Departments
- Cities and Waterbody Managers
- Academics and Researchers (UC Davis, UC Santa Cruz, Cal State MLML, SCCWRP, SFEI)
- Metropolitan Water and PacifiCorps
- Others

California CyanoHAB Network Accomplishments

- Draft Voluntary Guidance about Harmful Algal Blooms
- OEHHA Report on Suggested Action Levels for Blue Green Algae Toxins (Cyanotoxins)
- Several Trainings
- Funded:
 - Water quality investigation on Klamath River watershed
 - Development of LC-MS/MS methods for analysis of cyanotoxins
 - Investigated Sea Otter poisoning cases near Monterey Bay
 - Nonpoint source project for Pinto Lake

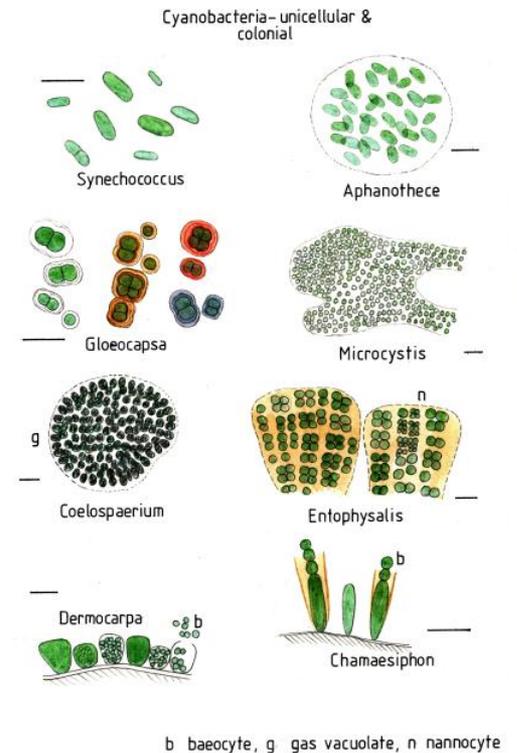
California CyanoHAB Network Long-term Goals

1. **Coordinate monitoring and management** of cyanoHABs.
2. Develop **collaborative relationships** among entities responsible for addressing cyanoHAB concerns.
3. Make **efficient use of** resources to address and communicate cyanoHAB concerns.



California CyanoHAB Network Next Steps

- Workgroup of the **California Water Quality Monitoring Council**
- Draft Voluntary Guidance for Posting of Recreational Water Bodies
- California's Surface Water Ambient Monitoring Program (SWAMP) - Freshwater HABs Program



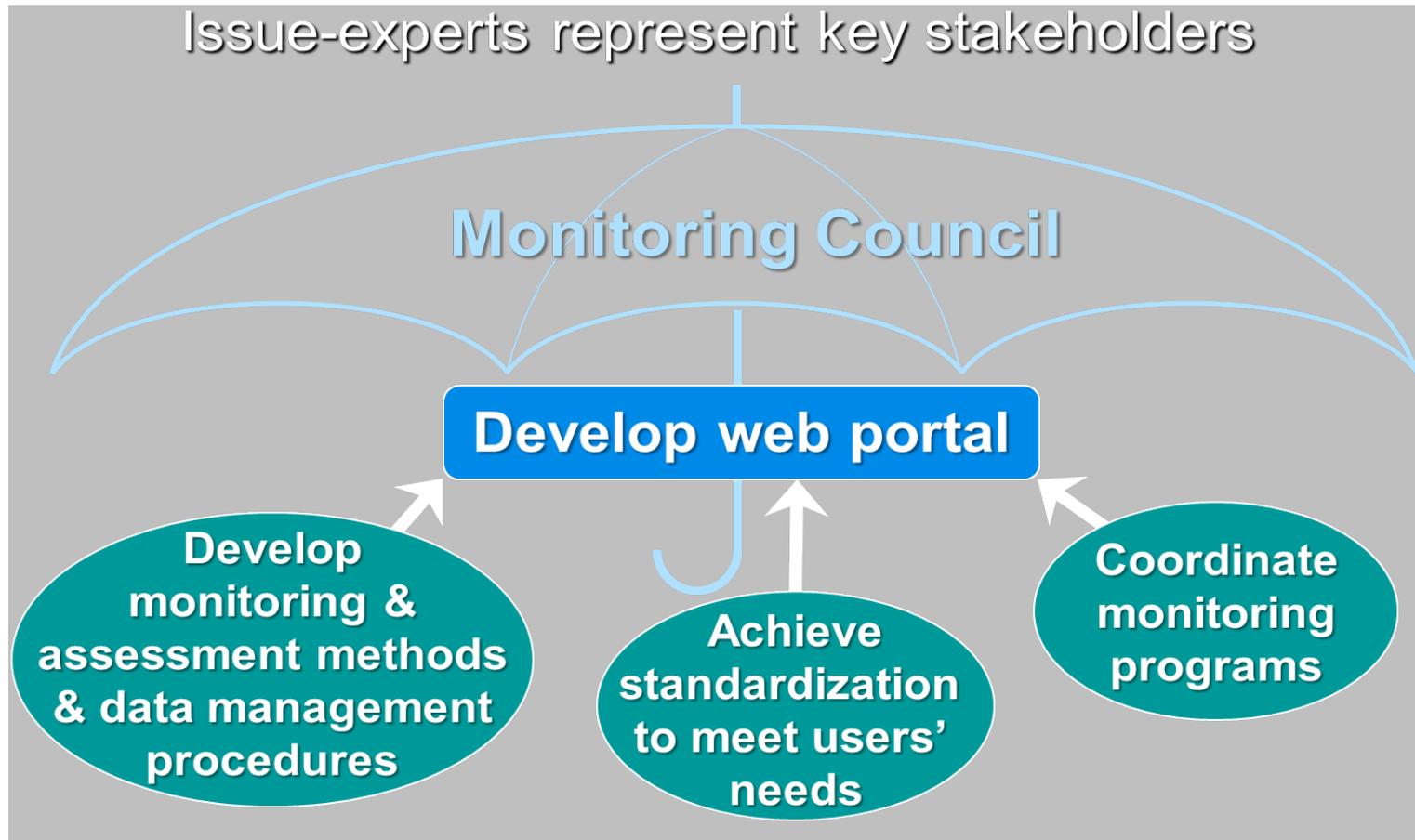
California Water Quality Monitoring Council

- Established in 2006 via CA Senate Bill 1070
 - Maximize efficiency and effectiveness of existing water quality data collection and dissemination
 - Ensure data available to decision makers and public
 - Provide framework to motivate and guide improvement
- Ten Workgroups
 - Bioaccumulation Oversight Group
 - Safe Drinking Water Workgroup
 - Safe-to-Swim Workgroup



California Water Quality Monitoring Council

Theme-Specific Workgroups



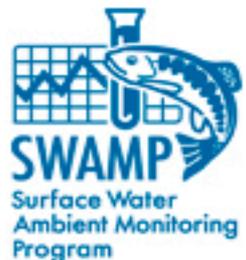
California Water Quality Monitoring Council

California CyanoHAB Network

- Develop a website
- Develop a My Water Quality portal under
 - What stressors and processes affect our water quality?*
 - Create the Go To Place for everything HABs and cyanotoxins
- Email listserv for the California CyanoHAB Network



www.MyWaterQuality.ca.gov

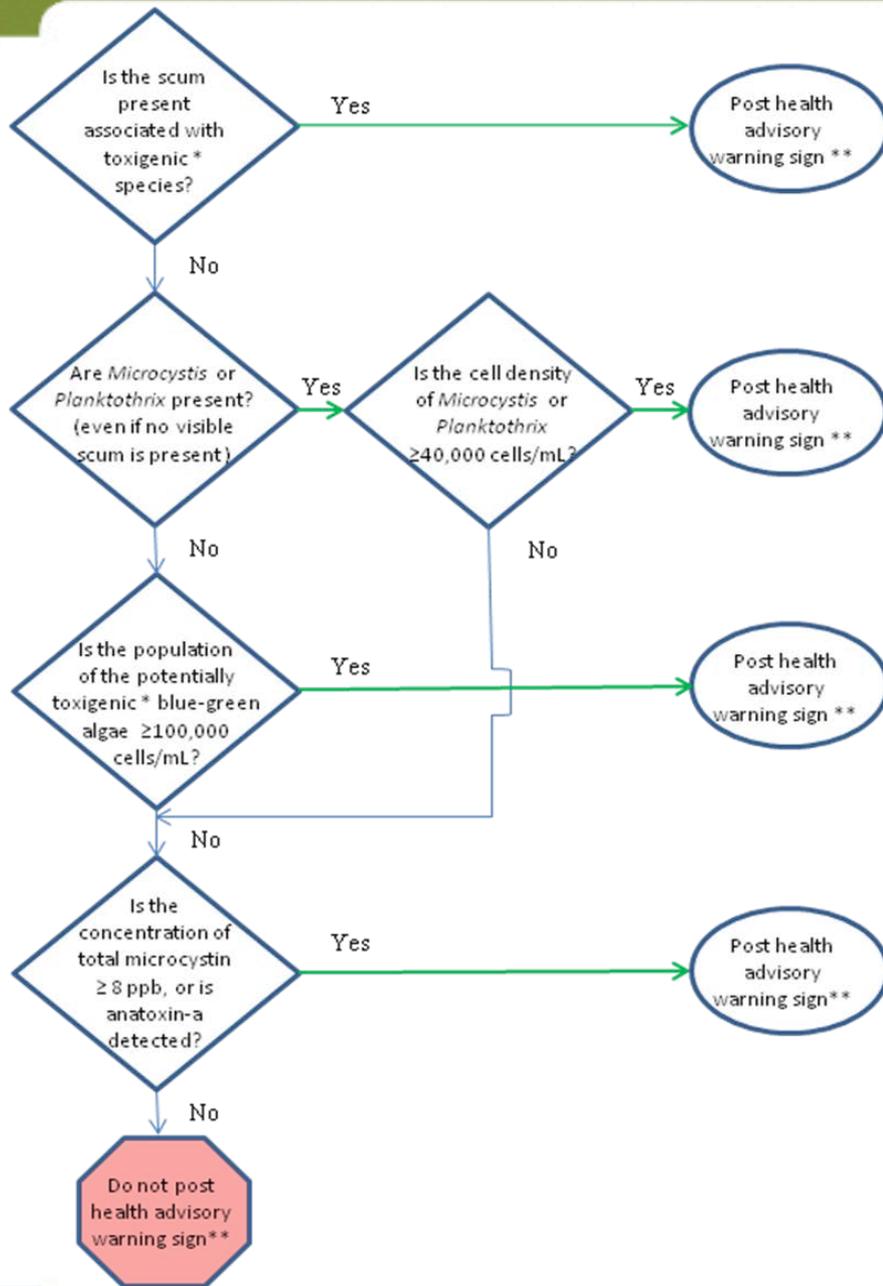


2010 Draft Voluntary Guidance

- **Authors:** State Water Board, Dept. of Public Health, and Office of Environmental Health and Hazard Assessment
- Recommendations for monitoring, reporting and posting, based on WHO's 2003 guidelines
- Recommends posting health advisories if:
 - Visible scum is associated with toxigenic species
 - Cell density of certain species is $\geq 40,000$ cells/mL
 - Cell density of potentially toxigenic species is $\geq 100,000$ cells/mL
 - Concentration of total microcystin is ≥ 8 $\mu\text{g/L}$

2010 Draft Voluntary Guidance

- Also includes:
 - General information about cyanotoxins
 - Guidance for posting and lifting advisories
 - Guidance for providing public notification
 - Websites and resources for more information
 - Examples of signage, public brochures and press releases
- Does not address cyanotoxins in drinking water
- Accessible at:
<http://www.cdph.ca.gov/HealthInfo/environhealth/water/Documents/BG/ABGAdraftvoluntarystatewideguidance-07-09-2010.pdf>



2010 Draft Voluntary Guidance

HEALTH ADVISORY



[water body]

AVOID WATER CONTACT

Due to high levels of blue-green algae that can produce harmful toxins.

Do not use this water for drinking or cooking.

Children and pets are at greatest risk.

For more information contact:
 [local agency] at: [number] or [website]
 Local Health Department at: [number] or [website]
 DHS Environmental Health Specialist at: 503-731-4012
 or www.oregon.gov/DHS/ph/envtox/maadvisories

Local Agency Logo



Local Health Department Logo

Toxicological Summary and Suggested Action Levels (OEHHA 2012)

- Developed **numeric action levels** for **three cyanotoxin types** in **exposure scenarios** at which there are risks to human and animal health
- Action levels for Human Recreational Use
 - Microcystins - 0.8 µg/L
 - Anatoxin-a - 90 µg/L
 - Cylindrospermopsin – 4 µg/L
- Accessible at:
http://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/calif_cyanotoxins/cyanotoxins053112.pdf

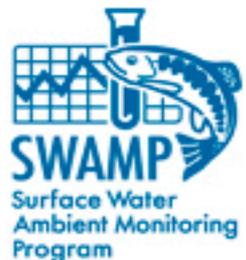
Draft Voluntary Guidance Update

➤ Considerations

- What are the needs of the public, waterbody managers, and public health officers?
- How to incorporated new science like from OEHHA?
- How do other states address posting of waterbodies during cyanoHAB blooms?
- What have we learned about cyanoHABs in California?
- How do we address both the high levels of cyanotoxins and low levels of cyanotoxins?
- What can we learn from our drinking water partners?

SWAMP Cyanotoxin Projects

- Monitoring Strategy
 - Statewide roadmap for monitoring.
- Satellite Monitoring Projects
 - NOAA collaborative project for ~170 water bodies
- Newsletter/Website
 - Feed into the portal
- Field and Laboratory Guidance Documents
 - Standard Operating Procedures
- State Water Board Training Academy
 - July 2015 and Spring 2016
- Laboratory Resources
 - Laboratory resource guide and contact



Summary and Questions

- Increasing in the number of ongoing projects and resources that will be available.
- Increasing efficiency and effectiveness through collaboration to address cyanoHAB concerns in California.

